

*Amendments to the Claims*

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 – 11 (Canceled)

12. (Previously Presented) A method for the assembly of a ~~thin-film~~ composite polymeric membrane comprising the steps of:

(a) forming a composite polymeric membrane comprised of a plurality of layers, wherein at least one of said layers comprise a polymeric material and wherein each of said layers has average thickness of less than 100 nm, said composite polymeric membrane formed upon a substrate by the substeps of:

(i) immersing said substrate in a first aqueous solution or dispersion of a first substance, said first substance having an affinity for said substrate, to form a first layer;

(ii) rinsing said substrate with neat solvent;

(iii) immersing said substrate in a second solution or dispersion of a second substance said second substance having an affinity for said first substance to form a second layer;

(iv) rinsing said substrate with neat solvent; and

(b) separating said substrate from said composite polymeric membrane, overcoming the affinity between said first layer of said first substance and said substrate while retaining the affinity between said first substance and said second substance in said additional layers.

13. (Previously Presented) The method of claim 12 further comprising the step of:  
applying said substrate to a support surface before said step of forming said composite polymeric membrane.

14. (Previously Presented) The method of claim 13 wherein step (b) comprises the steps of:

(i) removing at least a portion of said substrate together with said composite polymeric membrane from said support surface; and

(ii) separating said substrate from said composite polymeric membrane.

15. (Canceled)

16. (Previously Presented) The method of claim 12 wherein step (b) comprises:  
dissolving, melting, etching or destroying said substrate in a solvent that  
does not destroy said composite polymeric membrane.
17. (Withdrawn) The method of claim 12 wherein step (b) comprises the steps of:  
melting said substrate at a temperature that does not destroy said layer-by-  
layer thin film.
18. (Previously Presented) The method of claim 12 wherein step (b) comprises the  
steps of:  
chemically or physically treating said thin film assembly to destroy bonds  
between said substrate and said thin film without destroying said composite  
polymeric membrane.
19. (Previously Presented) The method of claim 12 further comprising the step of:  
for at least one repetition of step (a)(i), replacing said first aqueous solution

or dispersion of said first substance with a solution or dispersion of a third substance, said third substance having an affinity to said second substance.

20. (Previously Presented) The method of claim 12 further comprising the step of:
- for at least one repetition of step (a)(iii), replacing the second solution or dispersion of said second substance with a solution or dispersion of a fourth substance, said fourth substance having an affinity to said first substance.
21. (Previously Presented) The method of claim 12 wherein:
- for at least one repetition of step (a)(i), said first aqueous solution or dispersion of said first substance is of a biological compound.
22. (Previously Presented) The method of claim 12 wherein:
- for at least one repetition of step a(iii), said second solution or dispersion of said second substance is of a biological compound.
23. (Previously Presented) The method of claim 12 wherein:

for at least one repetition of step (a)(i), said first aqueous solution or dispersion of said first substance is comprised of a structural stabilizing material selected from a group consisting of macromolecules, exfoliated clay platelets, nanoparticles, nanowires, and carbon nanotubes.

24. (Previously Presented) The method of claim 12 wherein:

for at least one repetition of step (a)(iii), said second solution or dispersion of said second substance is comprised of a structural stabilizing material selected from a group consisting of macromolecules, exfoliated clay platelets, nanoparticles, nanowires, and carbon nanotubes.

25. (Previously Presented) The method of claim 12 further comprising the step of:

inducing cross-linking between said layers by means selected from a group consisting of chemical, radiative, photoreactive and thermal means.

26. (Previously Presented) The method of claim 12 further comprising the step of

repeating steps (a)(i) through (a)(iv) a predetermined number of times to

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Amendment

form additional layers.